Amendment to the Abstract:

The Abstract has been amended. A revised Abstract is attached.

Attachment

ABSTRACT

~~It has been desired to confine light in a direction which has no period of a photonic crystal with a simpler optical system.~~ An optical device which includes a GI-type photonic crystal slab ~~4~~ which includes: a first member which has a distribution of refractive indexes ~~12~~ reduced in both directions from an optical axis ~~20~~ of incident light as to a first direction vertical to the optical axis ~~20~~; and a second member periodically placed in substance among the first members as to a second direction different from the first direction, wherein the distribution of refractive indexes ~~12~~ of the first member which relates to the first direction, a thickness which relates to the first direction of the GI-type photonic crystal slab ~~4~~, a wavelength of the incident light and an incident end beam spot radius ω_1 which relates to the first direction inside an incident end ~~9~~ of the GI-type photonic crystal slab ~~4~~ entered by the light of the incident light are determined to have the incident light substantially confined inside the GI-type photonic crystal slab ~~4~~ as to the first direction.

Respectfully submitted,

Lawrence E. Ashery, Reg. No. 34,515
Attorney for Applicant

LEA/bj

Attachments: Abstract
Substitute Specification
(with marked version)

Dated: July 20, 2006

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The Director is hereby authorized to charge or credit Deposit Account No. **18-0350** for any additional fees, or any underpayment or credit for overpayment in connection herewith..

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I hereby certify that this paper and fee are being deposited, under 37 C.F.R. § 1.10 and with sufficient postage, using the "Express Mail Post Office to Addressee" service of the United States Postal Service on the date indicated above and that the deposit is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Dennis McDermott

43971

ABSTRACT

An optical device which includes a GI-type photonic crystal slab which includes: a first member which has a distribution of refractive indexes reduced in both directions from an optical axis of incident light as to a first direction vertical to the optical axis; and a second member periodically placed in substance among the first members as to a second direction different from the first direction, wherein the distribution of refractive indexes of the first member which relates to the first direction, a thickness which relates to the first direction of the GI-type photonic crystal slab, a wavelength of the incident light and an incident end beam spot radius ω_1 which relates to the first direction inside an incident end of the GI-type photonic crystal slab entered by the light of the incident light are determined to have the incident light substantially confined inside the GI-type photonic crystal slab as to the first direction.